Cases of glaucoma fulminans are exceptionally rare. Absolute amaurosis sets in during a few hours in apparently healthy eyes. There iridectomy has only been of more or less benefit during the first two or three days. With regard to the technique the writer would only like to point out that according to Schmidt-Rimpsler traumatic cataract need not necessarily be due directly to the instrument of the operator, but that with the humor aqueous escaping suddenly and the lens coming forward abruptly, a spontaneous rupture of the capsule, particularly in the equatorial region, may happen. In support of this statement the author quotes cases in which, soon after the operation, there had been capsulary cataract in the periphery of the lens, and which then remained stationary. At any rate, this might be considered a further reason to avoid quick escape of the aqueous. With a view of possibly avoiding or lessening retinal hemorrhages, at the Breslau University Eye Clinic, we were wont to have pressure applied to the bulbus by an assistant prepared therefor, immediately after the finishing of the kerato-sclerotomy. A prognostic point not sufficiently known, I believe, is the following:

If after iridectomy the tension be not analogous to the one you would expect following an operation on an eye with normal tension, the curative effect of the operation is doubtful, and the restoration of the anterior chamber will be slow. I should like to just mention that Goldzieker throws out the suggestion that possibly pulling the iris during the operation may have a curative effect, similar to the one in surgical operations on nerves. Arguing from his anatomical findings Treacher-Collins recommends tearing the iris off its root with a view to freeing Fontana's space the more securely, as had been practised already by Bowman. The advantage of this procedure would appear to be that an extremely peripheral incision is not necessary, thus avoiding the possible prolapse of ciliary processes. The conclusion of Treacher-Collins' argument is also for the earliest possible operation. I find in Professon Snellen's recent publication on eye-surgery that he claims prognostic value of favorable portent for the appearance of higher astigmatism after the operation. Adopting Priestley-Smith's well-known theory of the lessened perilenticular space in glaucoma he argues that applanation of the cornea towards the incision implies estasia of the bulbus in the ciliary region, which process the ciliary body is bound to follow, thus filling the perilenticular space. The conviction that in every case of primary inflammatory glaucoma iridectomy is indicated at the earliest has been finally supported by the statistics of Hirschberg and Haab, confirming the frequent absoluteness of the cure effected, in instances up to 32 years. The older the case of standing the less favorable it becomes prognostically, and the more the chronic inflammatory glaucoma loses its inflammatory character, leading over glaucoma simplex, the less can we rely absolutely on iridectomy alone.

Regarding simple glaucoma, the older Von Hippel has absolutely recommended iridectomy at the earliest. Still I am inclined in these cases always to do sclerotomy first, considering in cases of increased tension a subsequent iridectomy; necessary if the bulbus remains more resistent after sclerotomy than would be the case with a bulbus of normal tension. Whilst assistant with Pflueger, of Berne, I have done sclerotomy with implantation of a conjunctival flap in order to the better secure a filtration-cocatrix.

In conclusion I quote from Ziehe-Axenfeld's, the most critical publication extant on the subject, concerning 74 cases of sympathectomy. My own experience of the operation is very limited. They say, in general, sympathectomy is not indicated before iridectomy, the only exceptions would appear to be if iridectomy has done harm in the fellow-eye in cases of hemorrhagic glaucoma, or in glaucoma simplex with extreme deterioration of sight.

NOTE—At the coming meeting of the State Society there will be presented a symposium on Glaucoma—ED.

NEURALGIA AND SOME OF ITS CLINICAL FEATURES.*

By PAUL SANFORD, M. D., San Jose.

IF we accept the analysis of the word neuralgia for its definition, we will find that it falls short of the generally accepted meaning of the term. The term neuralgia is so firmly fixed in our nomenclature, however, that instead of discarding it altogether, it can be, and is modified so as to more specifically express our meaning, by using the suffix algia in connection with the name of the part or parts, which is the seat of pain, as cephalgia, cardialgia, etc. Then again, some pathological conditions accepted as neuralgia have distinct names no way associated in its nomenclature with the term neuralgia, viz: tic douloureux, sciatica, etc. Again, if we note the specific meaning of the word neuralgia, we see that we are yet unfortunate in its inability to accurately convey its true meaning. We are not sure whether algia (pain) is a distinct condition itself, with the nerves subservient to carry the impressions to the sensorium, or whether it is a quality of some other sensation. Dr. Collins, of New York, defines neuralgia as a symptomatic pain, dependent upon functional or organic disease of the sensory neuron, particularly the peripheral sensory neurons.

The cause of neuralgia may be both traumatic and idiopathic. The principal factors of the lat-

* Read before the Santa Clara County Medical Society.

ter are age, sex, heredity, exposure, and any condition that lowers the vitality of the individual, and deprives the nerves of the proper amount of nutritive element, such as auto-intoxication, indigestion, non-assimilation, infection, syphilis, influenza, etc. In auto-intoxication the organs themselves may be derelict in their duties, from pathological causes, or simply overtaxed in their work of eliminating poisonous products from the system. We see this very marked in those indivi-uals who through hurry and rush of business haven't time, or don't take time, to properly masticate their food. Or more frequently, by those who live to eat and not eat to live, and whose happiest hours are spent at the table. I believe this is directly and indirectly the cause of more neuralgia than is generally believed, especially sciatica and its complement, lumbago. It has been said that if a man eats too much, he has dyspepsia, grows fat, or breaks out with boils. I might add with the same degree of truthfulness, contracts neuralgia.

The subjective symptom of neuralgia is pain, its character depending upon the cause, nature and location. The description of the pain varies according to the vocabulary of the sufferer and the scope of his imagination. It is almost invariably paroxysmal, and is described as boring, gnawing, tearing, lancinating, lightning-like, etc., varying in intensity and lasting from a second to several minutes, with intervals of comparative ease and comfort. I have seen strong men cry like a child and beg for someone to kill them, and end their agony, while suffering from neuralgia. While possibly not so constant, or probably overlooked, the objective symptoms have great diagnostic value. If we press down at the seat of pain, the patient complains of its being aggravated, and especially is this true when pressure is made at the point where the nerve emerges from its bony canal, or at any locality where the pressure is most efficient. Herpes is seen in that rare form of neuralgia called shingles, though the latter is by some classed among the skin diseases. Occasionally the muscles at the seat of pain are affected by clonic spasms, supposed to be reflexed from the peripheral sensory neurons, to the motor peripheral neurons.

In the treatment of neuralgia the earnest student and honest practitioner has a wide field. It is easy, indeed, after a hurried examination, to diagnose the case in hand as neuralgia, and prescribe one of the almost infinite variety of palliating remedies to relieve the pain. This is well enough, but it is quite another thing to reach the cause and direct the treatment for its removal. I find the cause in many instances quite obscure. It is difficult to say sometimes whether the affection is neuralgia *per se*, or a symptom of some other disease.

I wish to refer to a patient I had in Colusa county some five or six years ago. The lady was suffering with pain in the right maxillary region, and on examination I detected a decayed tooth on the right side. I referred her to a dentist. The dentist referred her back to me, saying that the tooth in question was not in any way responsible for the pain. This was during an epidemic of la grippe. As I had several patients with grip where the glands of the neck and jaw were involved, resulting in suppuration after five or six days of intense suffering, I thought this also might be that complication. I gave her some morphine to relieve her, poulticed, and awaited the suppuration. There was but little swelling, but the pain was excruciating; not paroxysmal, as in tic. Nothing except morphine gave her any relief. The jaw became almost set. This condition remained for about 10 or 15 days, when the pain became gradually less severe and in two or three weeks more left entirely. During this time the right side of the face became smaller and the right eye became about half its usual size, but proportional in its parts. The face presented a peculiar expression; each side seemed normal in its anatomy and function, except that the lower jaw was impaired in its action. This was the condition when I last saw her about two months after she was first seen. Was the case referred to neuralgia? If so, what was the cause? And what produced the atrophy, you might call it, of the affected side?

Even with our best efforts we are often subject to disappointment in the treatment of neuralgia. We sometimes flatter ourselves that we have found almost a specific, in certain forms of neuralgia, and begin to count our cures with full assurance of continued success, when all at once, in common parlance, "we are up against it". I had a few cases of obstinate sciatica that yielded so readily and nicely to deep injections of ether, that I began to flatter myself that I had the remedy. But I fell into the error of treating empirically, without discovering the etiology and directing my efforts to removing the cause. It is useless to say that the result was disappointing.

One of the most interesting cases of neuralgia I have chanced to meet was encountered here in this city. Some two or three months ago a man came into my office with a complaint that dated back some five or six years. At that time he was picking fruit and doing some heavy lifting. He noticed a disagreeable sensation in his right side that could hardly be called a pain, but gradually grew worse, though not severe enough to keep him from work. It finally assumed a certain stage, sometimes better sometimes worse, changing as the weather and his work varied. He was not confined to his bed at all. It was necessary for him to be quiet most of the time and he was not able to do heavy work. Sometimes the pain was tolerably severe. It seemed to originate in the right side and run down the anterior of the thigh to the foot. Again, at times, he would notice it only in his leg. His sleep was greatly disturbed, of course, and his health impaired; his system seemed to give way under the effects of his ailment. After eliciting the above history I made an examination. I found the ribs on the affected side very close to the brim of the pelvis and so close to each other that they seemed to ride one on the other. I told him I did not see that I could do him any good with medicine, and referred him to a masseur, with the hope that possibly a course of massage might help him by re-

storing the ribs to their proper position. He seemed to improve very much under this treatment, for the first week or so, but after a pretty fair trial of some two or three weeks he was as bad as ever. I called Dr. Perrin in consultation, and he, in the main, agreed with me in diagnosis. We advised an operation. I told him to study over the matter and that I could not promise him anything, even by this procedure. He finally concluded to take his chances in an operation. Dr. Whiffen agreed with me, that an operation might give him relief. He suggested that we remove part of the anterior portion of the tenth and eleventh ribs, and as a kind of guess, stretch the anterior crural nerve and some of its small branches. This was done on the 18th of July last. I am not able to report a complete recovery as yet, but my opinion is that the result of the operation is going to be satisfactory.

In closing this paper I wish to report a case that came under my observation before I became a student of medicine. The case referred to was one of traumatic sciatica in a friend of mine. In July in the eighties, when a student, he was taking exercise by jumping, after which he felt some uneasiness in his left hip, but paid very little attention to it, thinking it would soon pass away; but instead of getting better, it gradually grew worse. He spoke to his preceptor, with whom he was studying medicine, and the latter suggested that my friend use a cane, and gave him some liniment to apply. His condition grew worse, until it became necessary for him to use a crutch. He had planned to attend lectures that fall, and he went to St. Louis for that purpose, still using the crutch. He consulted several doctors in St. Louis, but none of them did him any good. He gave up his lectures the first of the year and came home. His preceptor put him on his back, with a long splint reaching up beyond the hip, and immobilizing the hip joint. He remained in that position for 60 days, and when he got up was entirely well.

This history is especially interesting to me, because of the diversity of opinion in the diagnosis among several of the most eminent surgeons who saw the patient at that time. Whatever may be the cause of neuralgia, whether traumatic or idiopathic, or whether neuralgia has a lesion itself or is only a symptom of another disturbance, our efforts should be to get at the bottom of the pathologic condition, and give permanent relief when possible, whether that be through medical or surgical means.

DISCUSSION.

In the discussion Dr. R. A. Whiffin referred to the subject as follows: Resection of a portion of the tenth and eleventh ribs for the patient referred to by Dr. Sanford, and upon whom I operated, gave absolute relief from the pain in the side, while the stretching of the anterior crural nerve gave relief from the pain the patient experienced in the leg, but left in its place a soreness which is no doubt due to the disturbance produced by stretching the nerve and it is a question with me whether it will finally give complete relief or not.

I wish to mention a treatment for tri-facial neuralgia recently tried by Dr. J. B. Murphy of Chicago, but which has been used by some English surgeon on a number of cases. It consists in dissecting out the supra-orbital, infra-orbital and mental nerves at the points where they emerge from their bony canals, and injecting into them a few drops of osmic acid. This gave relief to Dr. Murphy's patient, although the exact action of the acid in doing so is not definitely known. If this treatment should prove successful it will be a blessing to sufferers from tri-facial neuralgia as it will save a great many of them from the ordeal of resection of the nerve inside the skull. I think it is worth consideration.

Dr. I. N. Frasse: It is of great importance, whether a pain be neuralgia or not, in concentrating our thoughts upon a cure, to not accept it as necessarily being, where at first glance it seems to be, but that we take into consideration that many pains have a distant origin. This is extremely common in neuralgias of a chronic variety. You all know that in tic douloureux the nerve pain is sent out to the nerve endings from a more central origin, and that only too often nothing short of removing the ganglion will give more than temporary relief. A sciatica is often but symptomatic and, owing to the intimate relation with the rectum, it may be due to the pressure of a scybalum in, or to a tumor of that portion of the intestine. This is particularly common on the left side. How often do you find nerve pain at the inside of the knee mistaken for a neuralgic pain when perhaps it is due to hip-joint disease? The ankle is abundantly supplied with nerve filaments, and through the medium of the long saphenous, and of the other five nerves supplying this region, pain is sometimes transferred from tumors and other diseases of the spine in the neighborhood of the lumbar and sacral regions.

Sometimes a nerve pain of a neuralgic type is due to an inflammatory disorder, but is transferred like any other nerve pain. The sympathetic supplying the abdominal contents receives filaments from the spinal nerves, which in turn supply the abdominal walls, and I may recall to your minds that the oncoming pain of recurrent appendicitis is often felt at first in the region of the umbilicus before it is manifested in the locality of the appendix itself. And so one might mention examples without end wherein the physician must be on his guard.

Dr. J. E. Truman: In reference to neuralgia, my experience leads me to believe that it is always, when not toxic, due to the products of malassimilation, infectious disease or allied causes; a reflex phenomenon. A lesion or source of irritation more or less remote from the seat of pain may always be looked upon as the source of the trouble. We are all familiar with the left breast pain, headache and, in fact, pains in any part of the body from the cicatrical plug of a lacerated cervix; the various neuralgias from carious teeth, and many other reflexes. I believe that when we have pain in the nerve locally, it is always of the character of neuritis. As to treatment, my experience favors massive doses of sodium salicylate. Although this empirical, it can be relied upon.

Dr. G. F. Witter: I shall not attempt to add anything to what has already been so ably offered at this time, farther than to ask that the closing reference to the importance of learning the exact changes which are sure to command our attention and anxiety in some of the developed reflexes which so often confront us in this class of the nerve group of diseases. I can do no better in this connection than to refer to a case that came under my observation some time since, after the patient had returned from the medical care and supervision of a prominent expert in nervous diseases, who was a resident of Chicago. The able expert pronounced the disease absolutely dangerous and incurable, and his sincerity was the more manifest when he advised the patient to return home and close up his business without delay. A careful examination into the case of the almost unendurable pain in the left eye and left orbital nerve revealed the fact that the pain had its origin in the lower branch of the auriculo temporal nerve, and that the pain radiated in the region of the ear along the lower left jaw and teeth, which was evinced most clearly by finding a tender and painful point along the jaw

by striking the teeth along the left submaxillary with a tooth forceps, until I reached the wisdom tooth, which was found almost alarmingly tender and painful. This tooth was extracted, and the pain, which had been so alarming, soon subsided and the eyes resumed their normal action and appearance. This case speaks volumes in favor of the theory advocated by Dr. Sanford, as well as the line of argument of Dr. Asey and other able supporters of the reflex theory.

ASEPSIS; ESPECIALLY IN THE PRACTICE OF OBSTETRICS*

By J. W. GRAHAM, M. D., Lompoc.

IN undertaking to write upon "Asepsis," the first difficulty encountered was to define the limits of the subject; once decided upon, the next question that presented itself was how best to make use of the time allotted for its discussion. It is impossible in this paper to go with any fullness into the details of the experimental research by which the truth of the germ theory was proved. Adopting the germ theory of putrefaction and fermentation, the great importance of cleanliness and of antiseptics is made plain, means which will exclude the access of germs. The question now is: What is necessary to be done to prevent sepsis occuring in the obstetrical chamber?

The following from the pen of a noted writer, an obstetrician of wide experience, seems to me to be up-to-date advice, and about what we hear and read from every source. Asepsis, as advised by him, is not necessary in a country practice, if it were attainable, which cannot be the case once in a thousand times:

When a patient is taken in labor, she is given a full tepid bath and scrubbed with soap, and to make the bath still more effective, it might be well to add soda to the soap and water; after the bath she is dressed in clean clothes and placed in a clean bed; under the sheet of which is placed a rubber sheet disinfected with bichloride, 1-1000. She is given an enema of soap suds; her abdomen, thighs, buttocks, and especially all the sulci at and near the genitals, are carefully washed with bichloride, 1-2000; after this about two quarts of the same fluid is injected into the vagina.

Now if the woman is still alive and in as good health, and as free from bacterial infection as she was when the ordeal began, and has not already been confined, she surely will be by the time the doctor is in good antiseptic trim to see her.

He ought to take off his coat and cuffs, roll up the sleeves of his shirt and undershirt, and clean and disinfect his hands, chemically and mechanically. It is not enough to use soap and rub our hands one against the other, as in ordinary cosmetic washing. The whole hand must be carefully scrubbed with a stiff nail brush, the doctor taking particular care to scrub the spaces under the nails and the creases at their root. After washing the hands are wiped dry and the spaces under the nails carefully scraped with a suitable instrument. This performed, the hands are emersed in a bichloride solution, 1-200, for at least three minutes, in which the scrubbing may be repeated.

It appears that the washing and scrubbing out with soap and disinfecting and antiseptic procedure with the bichlorid solution must be in separate acts, that it is not sufficient or desirable to use the soap in the bichlorid solution; I would suggest the reason for this that in using both at the same time the bichlorid might interfere with the antiseptic properties always contained in soap. The soap used is the soft potassa variety, and in a sensible conclusion he adds, in evidence of the true merit of soap as an antiseptic:

We cannot have a better proof of the high practical value of this soap as an antiseptic than the excellent results obtained in the large lying-in hospital of Vienna, where they have had a series of five hundred confinements, without a death from sepsis," for, says he, "since the standard antiseptic used in that institution is only a ½% solution of carbolic acid, which has been proved experimentally to possess very weak antiseptic properties, it would seem that the results obtained are due more to the soap than to the carbolic acid.

In my paper today it is my purpose to show that asepsis, in the sense in which it has come to be accepted, is unattainable and not necessary for the obstetrician in a country practice. Owing to the fact that progressive country doctors are largely dependent for their knowledge of bacteriology and other kindred sciences upon books and magazine articles written by the city men *for* city men, we have unconsciously accepted metropolitan standards of asepsis which, although well enough perhaps as ideals, are nevertheless unattainable (and unnecessary) in our surroundings and the conditions we have to meet in a country practice.

In support of this statement I would call the attention of my colleagues to a few facts with which, although I am sure you are all quite familiar, perhaps have not been placed before you in such a way as to lead to reflection upon their true merit and their value, to the majority of the medical profession. We, the country physicians, are they who meet and overcome the real trials and difficulties of medical practice.

First. I wish to ask of you: How many ever considered the importance of one fact, well known to all of us, that although we do operation after operation with, from the accepted point of view, very imperfect or no attention to strict asepsis, our results do not show a greater proportion of septic infection than do those of city doctors, who operate in hospitals where asepsis and antiseptics are carried to an extent which would be neither desirable nor attainable with us in our surroundings? This is due to several facts, and it shall be my endeavor, in this paper, to place them before you in their true significance. We have the records of very exhaustive bacteriological experiments carried on at great cost and labor, the practical results of which have been entirely ignored or at least never applied to any material

*Read before the Santa Barbara County Medical Society.

(Continued on Page 133.)